

### Amendments to the Claims

The following listing of the claims replaces all previous listings and versions of the claims in the application:

### Listing of the Claims

Claims 1-15: (Canceled)

16. (currently amended) An electronic device comprising:

a first metal layer[[-]];

a second metal layer;

~~at least one a~~ layer of device material sandwiched between the first metal layer and the second metal layer which function as electrodes for the device material[[-]];

a first terminal for providing a first electrical connection to the device[[-]; and

a second terminal for providing a second electrical connection to the device[[-]];

wherein the first terminal is electrically connected to the first metal layer, and the second terminal is insulated from the first metal layer and electrically connected to the second metal layer by (i) a conductive channel which passes through and is insulated from the first metal layer and the layer of device material, and (ii) a conductive element that electrically connects the conductive channel to the second metal layer; whereby the first terminal is electrically connected to the layer of device material only through the first metal layer, and the second terminal is electrically connected to the layer of device only through the second metal layer.

17. (original) A device according to claim 16, wherein the conductive channel comprises a metal plated channel.
18. (original) A device according to claim 16, wherein the second terminal is insulated from the first metal layer by a first layer of insulating material.
19. (original) A device according to claim 18, wherein said first layer of insulating material substantially covers said first layer of metal.
20. (original) A device according to claim 18, comprising a third layer of metal disposed on the first layer of insulating material and where said third layer is divided by an isolation area to provide the first terminal and the second terminal.

21. (currently amended) A device according to ~~claims~~ claim 16, further comprising a third terminal for providing a third electrical connection to the device[.]; and a fourth terminal for providing a fourth electrical connection to the device[.]; wherein the fourth terminal is electrically connected to the second metal layer, and the third terminal is insulated from the second metal layer and electrically connected to the first metal layer by (i) a second conductive channel which passes through and is insulated from the second metal layer and the layer of device material, and (ii) a second conductive element that electrically connects the second conductive channel to the first metal layer; whereby the third terminal is electrically connected to the layer of device material only through the first metal layer, and the fourth terminal is electrically connected to the layer of device material only through the second metal layer.
22. (original) A device according to claim 21, wherein the second conductive channel comprises a metal plated channel.
23. (original) A device according to claim 21, wherein the third terminal is insulated from the second metal layer by a second layer of insulating material.
24. (original) A device according to claim 23, wherein said second layer of insulating material substantially covers said second layer of metal.
25. (original) A device according to claim 24, wherein the fourth terminal is electrically connected to the second metal layer by an interconnect formed through said second layer of insulating material.
26. (original) A device according to claim 21, wherein the second conductive channel is provided at one end of the device.
27. (original) The device of claim 26, wherein the first conductive channel and second conductive channel are located at opposing ends of the device.
28. (original) The device of claim 16, wherein the first conductive channel is located at one end of the device.

Claims 29-31: (canceled)

32. (original) A device according to claim 16, wherein said at least one layer of device material comprises alternating layers of device material and metal.
33. (original) A device according to claims 16, wherein said device is a PTC device and said device material is a PTC material.

Claims 34-42: (canceled)

43. (Currently Amended) A method of manufacturing a matrix of electronic devices according to claim [[35]] 73, wherein the steps of applying a first layer of insulating material to the first metal layer and providing a third metal layer on the first layer of insulating material are performed in a single step by the application of a resin clad metal.

Claims 44-46: (canceled)

47. (Currently Amended) A method of manufacturing a matrix of electronic devices according to claim [[35]] 73, wherein said structure comprising ~~at least one a~~ layer of device material sandwiched between [[a]] first ~~layer of~~ metal and [[a]] second ~~layer of~~ metal layers is a multi layer structure comprising alternating layers of device material and layers of metal.
48. (Currently Amended) A method of manufacturing a matrix of electronic devices according to claim [[35]] 73, wherein the device is a PTC device and the device material is a PTC material.
49. (Currently Amended) A method of manufacturing a matrix of electronic devices according to claim [[40]] 73, comprising the additional step of joining a second matching matrix of electronic devices to the matrix such that terminals of adjoining faces of each matrix are aligned and electrically connected.

Claims 50-53: (canceled)

54. (Currently Amended) A method of manufacturing a matrix of electronic devices according to claim [[35]] 73, wherein the device material is a dielectric material.
55. (Currently Amended) A matrix of electronic devices comprising:  
a first metal layer[[.]];  
a second metal layer;

at least one layer of device material sandwiched between the first metal layer and the second metal layer which function as electrodes for the device material[[.]]; a first array of terminals for providing electrical connections to individual devices of the matrix[[.]]; and a second array of terminals for providing electrical connections to individual devices of the matrix[[.]]; wherein each of the terminals in the first array of terminals [[are]] is electrically connected to the first metal layer, and wherein each of the terminals in the second array of terminals [[are]] is insulated from the first metal layer and electrically connected to the second metal layer by (i) a conductive channels channel which [[pass]] passes through and [[are]] is insulated from the first metal layer and the layer of device material, and (ii) a conductive element that electrically connects the conductive channel to the second metal layer, whereby the first terminal is electrically connected to the layer of device material only through the first metal layer, and the second terminal is electrically connected to the layer of device material only through the second metal layer.

56. (original) A matrix of electronic devices according to claim 55, wherein the conductive channels comprise metal plated channels.
57. (original) A matrix of electronic devices according to claim 55, wherein the second array of terminals are insulated from the first metal layer by a first layer of insulating material.
58. (original) A matrix of electronic devices according to claim 57, wherein said first layer of insulating material substantially covers said first layer of metal.
59. (original) A matrix of electronic devices according to claim 57, comprising a third layer of metal disposed on the first layer of insulating material and where said third layer is divided to provide the first array of terminals and the second array of terminals.
60. (Currently Amended) A matrix of electronic devices according to claim 55, further comprising:
  - a third array of terminals for providing electrical connections to the individual devices[[.]]; and
  - a fourth array of terminals for providing electrical connections to the individual devices[[.]];

wherein each of the terminals in the fourth array of terminals [[are]] is electrically connected to the second metal layer, and each of the terminals in the third array of terminals [[are]] is insulated from the second metal layer and electrically connected to the first metal layer by (i) a second array of conductive channels channel which [[pass]] passes through and [[are]] is insulated from the second metal layer and the layer of device material, and (ii) a second conductive element that electrically connects the second conductive channel to the first metal layer; whereby the third terminal is electrically connected to the layer of device material only through the first metal layer, and the fourth terminal is electrically connected to the layer of device material only through the second metal layer.

61. (original) A matrix of electronic devices according to claim 60, wherein the second array of conductive channels comprises metal plated channels.
62. (original) A matrix of electronic devices according to claim 60, wherein the third array of terminals are insulated from the second metal layer by a second layer of insulating material.
63. (original) A matrix of electronic devices according to claim 60, wherein said second layer of insulating material substantially covers said second layer of metal.
64. (original) A matrix of electronic devices according to claim 63, wherein the fourth array of terminals are electrically connected to the second metal layer by interconnects formed through said second layer of insulating material.
65. (original) A matrix of electronic devices according to claim 60, wherein each of the array of second conductive channels is provided at an end of each device of the matrix.
66. (original) A matrix of electronic devices according to claim 65, wherein each of the array of first conductive channels and second conductive channels are provided on opposing ends of each device of the matrix.

Claims 67-69: (canceled)

70. (original) A matrix of electronic devices according to claim 55, wherein said at least one layer of device material comprises alternating layers of device material and layers of metal.

71. (original) A matrix of electronic devices according to claim 60, wherein said device is a PTC device and said device material is a PTC material.
72. (canceled)
73. (New) A method of manufacturing a matrix of electronic devices, comprising:
- (a) providing a laminated structure comprising a layer of device material sandwiched between first and second metal layers;
  - (b) defining on the laminated structure a first end and a second end for each of the devices in the matrix;
  - (b) forming a first array of apertures through the laminated structure, each of the apertures in the first array being located at one of the first and second device ends defined in the laminated structure;
  - (c) applying a first insulation layer to the first metal layer;
  - (d) applying a second insulation layer to the second metal layer;
  - (e) substantially filling each of the apertures in the first array with insulating material;
  - (f) providing a third metal layer on the first insulation layer and a fourth metal layer on the second insulation layer;
  - (g) forming a second array of apertures through the laminated structure, the first and second insulation layers, and the third and fourth metal layers; each of the second array of apertures being located within the region defined by one of the first array of apertures, each of the apertures in the second array having a diameter less than the diameter of the apertures in the first array so as to form an array of insulated channels between the third metal layer and the second metal layer;
  - (h) forming an array of external conductive interconnections between the third and fourth metal layers through each of the apertures on the second array, each of the array of external conductive interconnections being insulated from the first and second metal layers and the layer of device material;
  - (i) forming a first array of internal conductive interconnections between the third and first metal layers through the first insulation layer, each of the first array of internal conductive interconnections being located near a first end of a device in the matrix;

(j) forming a second array of internal conductive connections between the fourth and second metal layers through the second insulation layer, each of the second array of internal conductive interconnections being located near a second end of a device in the matrix; and

(k) selectively removing metal from the third and fourth metal layers to define first and second arrays of terminals, wherein each terminal in the first array of terminals includes one of the array of external conductive interconnections and one of the first array of internal conductive interconnections, and wherein each terminal in the second array of terminals includes one of the array of external conductive interconnections and one of the second array of internal conductive interconnections.

74. (New) The method of claim 73, wherein the step of filling the apertures in the first array of apertures is performed when at least one of the first and second insulation layers is applied.

75. (New) The method of claim 73, wherein the step of filling the apertures in the first array is performed when the second insulation layer is applied.

76. (New) An electronic device manufactured by the method comprising:

(a) manufacturing a matrix of electronic devices according to the method of claim 73; and

(b) singulating the matrix into separate and discrete electronic devices.